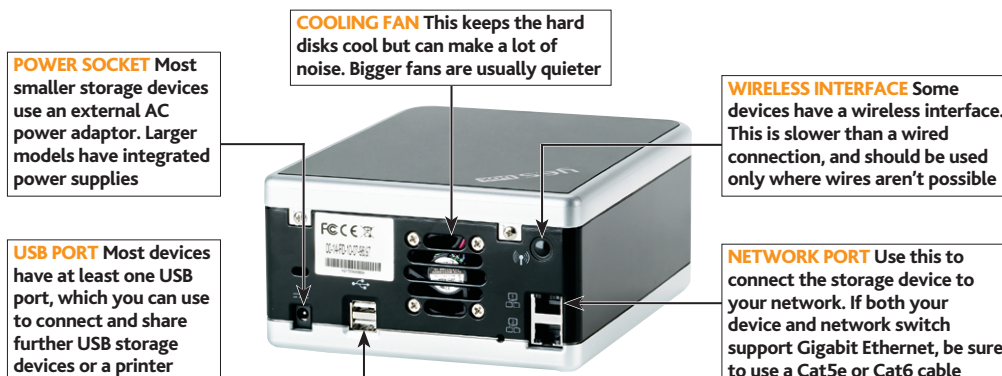


Network storage

A network storage device lets you manage data safely across several PCs. Alan Lu explains how to add one to your network



INTRODUCTION

More and more homes now have PC networks. But as any IT manager will tell you, a good network needs a file server that acts as a repository for shared files. You can set up one of your home PCs to act as a file server for music, photos and other files. But you'll need to leave that PC switched on to give your other computers continuous access.

A better solution is to buy a dedicated network storage device, such as one of those reviewed in our Labs on page 101. These are smaller and use less power than a PC. You can leave them powered up on your network, providing storage to your PCs whenever they need it. Many can act as print servers, and they make network backups easy, too.

This month's *Upgrade Workshop* guides you through the process of adding a storage device to your network. If you need to set up your network first, read our router upgrade guide from *Upgrade Shopper* November 2005, which is included on this month's cover disc.

Alan Lu
PC systems and
storage expert



alan@computersshopper.co.uk

Network storage devices cost more than internal hard disks, but they're still very affordable. Most of the devices reviewed in this month's Labs provide storage for well under a pound a gigabyte.

The simplest products contain a single hard disk, but bigger, more expensive devices often contain multiple disks. As an alternative to providing more storage space, products with multiple disks can be configured in a RAID array to protect your data if one disk fails. Even if you can't afford a RAID-enabled network storage device, you can still protect your data. Most have USB ports into which you can plug an external USB disk to make quick and easy backups. You may also be able to plug in a USB printer and share it on the network automatically.

You can buy network storage with wired or wireless Ethernet interfaces. Wired Ethernet is cheaper and much quicker than even the fastest wireless network. If you already have a wireless router, it should have some Ethernet ports to which you can connect a wired storage device, making it available wirelessly too. However, we recommend that you spend extra on a

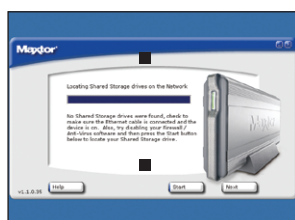
wireless storage device only if you don't have an up-to-date wireless router, or you need to site your file server somewhere you can't reach with cables.

Gigabit Ethernet gives the fastest performance when accessing your network storage, but your storage device, your computers and your router or network switch must all support this faster standard. You'll even have to replace any Cat5 Ethernet cables you have with Cat5e or Cat6 cables for reliably high speeds.

Most network storage devices are designed to be left on all the time. Unfortunately some devices, especially those with more than one hard disk, can be very noisy so you may wish to tuck them away. You should also make sure there's plenty of ventilation as some devices can become warm in operation.

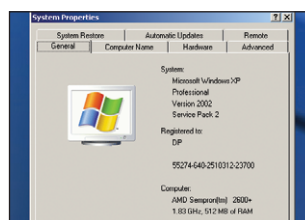
Most network storage devices support Microsoft's Universal Plug and Play (UPnP) protocol. This allows devices to connect to the PCs on your network with little or no configuration. Versions of Windows from Windows Me onwards have UPnP support built-in; see our compatibility checklist below. Network storage

Compatibility checklist



SETUP REQUIREMENTS

To configure your network storage device, you'll use a setup utility or web interface. A utility may require a specific version of Windows, while a web interface may work only with a particular browser, such as Internet Explorer 6. Make sure one of your PCs can run the setup, after which the device should be accessible from almost any PC.



CLIENT REQUIREMENTS

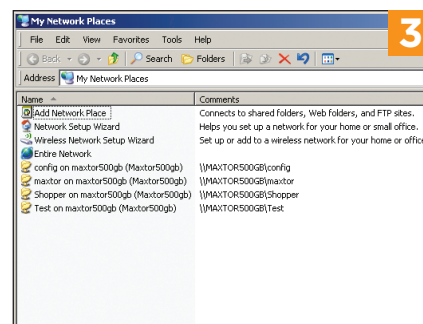
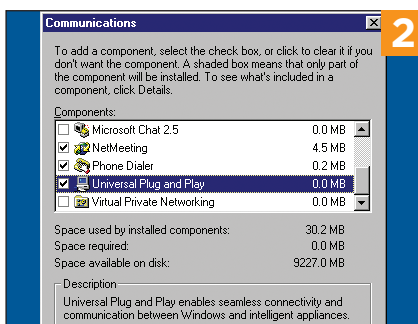
Unless your PCs are ancient, they should be able to access the network storage. All versions of Windows from 95 onward can use Windows File Sharing to connect. If your device supports UPnP, it'll be easier to connect from PCs that support this standard. UPnP is built into Windows Me, 2000 and XP, and makes adding the device to My Network Places virtually automatic.



INTERFACES

A wired device must be cabled to your network. Attach it to a free port on a router, switch or hub. If you don't have a port free, add a hub or switch to extend your network. It doesn't matter if a hub or switch stands between your storage and your wireless router; you can still access the storage wirelessly and you won't notice a performance hit.





devices that don't support UPnP depend on their own drivers, setup utilities or web interfaces for installation and configuration. Some of these may have their own requirements, such as a particular version of Windows. Again, see our compatibility checklist for details.

INSTALLATION

The physical installation of a network storage device is simple. The software you need to install will vary depending on the version of Windows you use and the make and model of your storage device. You may need to install drivers before you attach your device to your network; check the manufacturer's instructions to find out.

1 CONNECT THE DEVICE TO YOUR NETWORK

The easiest place to put your network storage device is near your network's router or switch. You could put it in a nearby cupboard if you're worried about noise from its disks or cooling fan, but make sure you can reach it to turn it off, and that it has ample air for cooling.

Simply plug one end of an Ethernet cable into your network storage device and the other end into a free port on a hub, switch or router. If both your storage device and switch support Gigabit Ethernet, you'll need to use a Cat5e or Cat6 Ethernet cable for the best performance. Any cable that comes with the device should be of the correct type.

EXPERT TIP

In Windows Explorer, use Map Network Drive... on the Tools menu to assign your network storage device a drive letter, making it easier to access.

PCs with wired network connections will have the fastest access to your storage device, so use wireless connections only where necessary. Keep all Ethernet cables and any power leads out of the way so no-one can trip over them.

2 INSTALL AND CONFIGURE YOUR DEVICE

If your network storage device doesn't support UPnP, you should install the necessary drivers or utility software according to the manufacturer's instructions. For some devices, you may have to install software on every PC from which you want to access the device. Check the instructions for guidance. Make a note of any IP address or Windows File Sharing name assigned to the network storage device during the setup process, as you'll probably need this later.

If your network storage device supports UPnP, you shouldn't need to install any additional software, but make sure UPnP is enabled on your computer. Windows 95 and 98 don't have support for UPnP built in, but if you can configure your storage device from another machine on your network, you'll be able to access it from PCs running these older versions using Windows File Sharing.

In Windows XP and Me, you enable UPnP by using Add or Remove Programs in Control Panel. In Windows Me, click on the Windows Setup tab. Click Communications and select Details. Make sure Universal Plug and Play is

checked. In Windows 2000 and XP, select Add/Remove Windows Components. Select Network Services in the resulting window and click the Details button. In the window that appears, make sure the tick box for UPnP User Interface is checked. When you've finished, click the OK button. Windows will install the UPnP software if necessary; you may need to have your original Windows installation disc to hand.

3 ACCESS YOUR NETWORK STORAGE DEVICE

Once you have installed the driver software or activated UPnP support on your computer, you should be able to connect to your network storage device. If your device uses UPnP, it should already be represented by an icon in My Network Places, which appears on your desktop or in the Start menu. You should now be able to copy files to and from your storage device.

If your device doesn't use UPnP, right-click on My Network Places and click Explore. In the resulting window, select Entire Network followed by Microsoft Windows Network. You should see a list of the available workgroups on your network. Your network storage device should be within the workgroup name you gave it when running the manufacturer's installation.

Alternatively, you may have to access your network storage device by typing its IP address or Windows File Sharing name into the address bar of Windows Explorer or Internet Explorer. If you didn't write these down when you configured your device, run the manufacturer's configuration utility or installer again.

Testing and troubleshooting

If you've configured your network device correctly, you should now be able to access it from any computer on your home network. Make sure you can access it from each computer in turn by opening the storage device and copying a few small files to it.

Transferring files over a network can be comparatively slow, particularly if you are using a wireless network connection or 10BaseT Ethernet. However, you can leave large copy operations running in the background while you use your computer – or even leave them running overnight.

If you normally connect to your network wirelessly, consider using a cable when you know you need to transfer lots of files, such as when copying your entire MP3 collection.

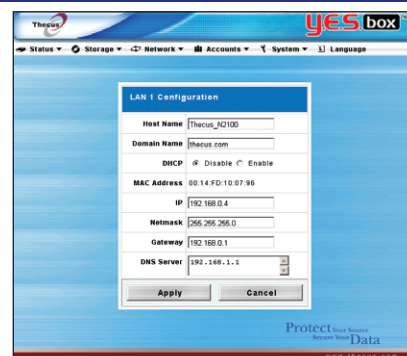
If you can't access your device from any of your PCs, check that you have set it up according to the manufacturer's instructions. Also make sure you have inserted the network cable correctly and not into a port on the

router marked 'hub' or with an X. Look for flashing lights next to its network port, which might indicate activity.

If the connections are correct, make sure your router is running a DHCP server and that your storage device is configured to obtain an IP address automatically. Most home networks are configured this way and most storage devices should lease an IP address by default. If you're not using DHCP, check that the address you have given the device isn't already in use.

If you still can't access the device at all, try reinstalling its drivers on your computer, making sure you reboot if prompted. Look in the device's instructions for a hardware reset option. If you can access your storage device from some PCs but not from a Windows 95 or 98 computer, it may be using UPnP. Look on the installation disk for an easy setup routine for earlier versions of Windows.

If you have a Gigabit Ethernet network but file transfer speeds seem a little slow, make sure



▲ If your network doesn't use DHCP, make sure your storage device has a unique IP address

the PC you're using, your network storage device and any hubs, switches or routers in between support Gigabit Ethernet. You should also be using Cat5e or Cat6 network cables for optimal performance.